



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/822,789	04/13/2004	Rabin Bhattacharya	10020/31701	3254
23838	7590	12/12/2005	EXAMINER	
KENYON & KENYON 1500 K STREET NW SUITE 700 WASHINGTON, DC 20005			LEE, CALVIN	
			ART UNIT	PAPER NUMBER
			2818	

DATE MAILED: 12/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/822,789	BHATTACHARYA et al.	
Examiner	Art Unit		
Lee, Calvin	2818		

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 21 October 2005 (Amendment).

2a)  This action is **FINAL**.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## **Disposition of Claims**

4)  Claim(s) 31-37 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 31-37 is/are rejected.

7)  Claim(s) \_\_\_\_\_ is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on 13 April 2004 is/are: a)  accepted or b)  objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All    b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1)  Notice of References Cited (PTO-892)
- 2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_

4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.

5)  Notice of Informal Patent Application (PTO-152)

6)  Other: \_\_\_\_.

## OFFICE ACTION

### *Response to Amendment*

1. The amendment of claims 31 and 37, dated October 21, 2005, is acknowledged.

### *Claim Rejections - 35 U.S.C. § 102 or 103*

2. Following are quotations of the appropriate paragraphs of 35 U.S.C. 102 (e) and 103 (b) that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having skills in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 31-34 and 37 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over *Wagner et al* in view of *Hsu et al* (Journal of Applied Physics, vol. 95, no. 2, January 2004) or of *Hsu et al* (Applied Physics Letters, vol. 81, n. 9, August 2002).

*Wagner et al* (US 2004/0192082) discloses a method of fabricating a device, comprising:  
-depositing an inorganic conductive or semiconductive layer **14** disposed over a substrate **16** (which has an original configuration) [Fig. 2B and ¶ 0065-0066];  
-depositing an organic layer (i.e., a second overlying substrate **16b**) [Fig. 14] on the inorganic conductive or semiconductive layer **14a** **14b**, such that the organic layer is in direct physical contact with the inorganic conductive or semiconductive layer;  
-deforming the substrate ‘layers of substrate **16a-16d** can be stretched to a pre-stretched percentage of X%’ [¶ 0082]

Since the stretched substrates have been transformed into curly substrates, those substrates must be deformed at an average radial or biaxial strain of at least 0.05% relative to the original flat configuration of the substrates [Fig. 16A and ¶ 0094].

Since *Wagner et al* discloses “stretchable interconnect 10 is formed as conductive stripe 20 on a substrate 16” [¶ 0070], *Wagner et al* inherently teaches or suggests that conductive interconnect stripe disposed over the substrate in an island configuration (i.e., the width of stripe 20 gives an island configuration if look at its width profile). Nevertheless, such electrode device with its island configuration can be found alternately in *Hsu et al* disclosing device islands [the Journal of Applied Physics reference, page 708, Figs. 15(a)-(c)] or in *Hsu et al* [the Applied Physics Letters reference, page 1725, Figs. 1-3].

It would have been an obvious matter of design choice to have the claimed electrode’s profile (suggested also by *Hsu et al*), since such a modification would have involved a mere change in the size of an isolation structure. A change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955).

#### *Claim Rejections - 35 U.S.C. § 103*

4. Claim 35-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Wagner et al* in view of *Wang et al* (2003 Materials Research Society Symp. Process, Vol. 769) [see IDS].
  - a) In re claim 35, *Wagner et al* suggests the substrate being a thin elastomer substrate of PDMS, a glass slide or a silicon wafer [¶ 0088], but is silent about the substrate being deformed at a temperature that exceeds its glass transition temperature. *Wang et al*, teaching the same deformation of an elastic substrate, discloses a curved electronic sensor made from a flat wafer of glass plate [page H2.8.1], wherein the wafer/substrate is curved and heated for 1.5 hrs at 130°C. This temperature is 70°C above the glass transition temperature of PMMA” [pg H2.8.3 and Fig. 4]

It would have been obvious to one having skills in the art to have modified the method of *Wagner et al* by utilizing a temperature that exceeds the substrate glass transition temperature for the purpose of performing the PMMA substrate to deform freely.

4. In re claim 36, *Wagner et al* does not explicitly suggest the substrate being deformed at a maximum strain rate of 1.5% per 50 minutes. However, it would have been an obvious matter of design choice to have the claimed strain rate, since such a modification would have involved a mere change in the time during the deformation process.

***Response to Arguments***

5. Applicant's argument "the claims as currently amended are not disclosed in the presently-cited art" is unpersuasive. Note in the above rejections, the specific portions of *Wagner et al* alone or in view of *Hsu et al* ((Journal of Applied Physics, vol. 95, no. 2, January 2004) or of *Hsu et al* (Applied Physics Letters, vol. 81, n.9, August 2002), in the IDS, have been pointed out in detail.

Dependent claims 35-36 are still rejected under 35 USC 103(a) as being obvious in view of *Wagner* and the Materials Research Society article by *Wang et al*.

The amended feature in claims 31 and 37 has made the rejection been FINAL.

6. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire three months from the mailing date of this action. In the event a first reply is filed within two months of the mailing date of this final action and the advisory action is not mailed until after the end of the three-month shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than six months from the date of this final action.

***Contact Information***

7. Any inquiry concerning this communication from the Examiner should be directed to *Calvin Lee* at (571) 272-1896 on Mondays thru Thursdays 6:30-4:30PM. If attempts to reach the examiner by telephone are unsuccessful, Art Unit 2818's Supervisory Patent Examiner *David Nelms* can be reached at (571) 272-1787. The fax phone number for the organization (where this application is assigned to) is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system at <http://pair-direct.uspto.gov>. Should you have questions on access to the PAIR system, contact the Electronic Business Center at (866) 217-9197.

CL

November 30, 2005

  
David Nelms  
Supervisory Patent Examiner  
Technology Center 2800